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ABSTRACT

This manual presents an instrument designed for visual arts education research and as a screening and identification test for use in gifted/talented education for artistically talented students. The test consists of four items or tasks that call for a demonstration of different abilities and skills. Each completed drawing is assessed and assigned a score through use of a Scoring Criteria Scale. Accumulated scores allow subjects within groups to be rank ordered. A 5 point scale, sensitive to graded differences among students at the same grade or age level, yields scores that differentiate between poor, below average, average, above average, and superior responses in all groups at the targeted age range, from 10 years old to adult. The manual also presents background information describing how earlier researchers collected children's art work and administered tests to determine various aspects of what children's art works look like at different ages and levels of development. Contains 69 references. (MH)

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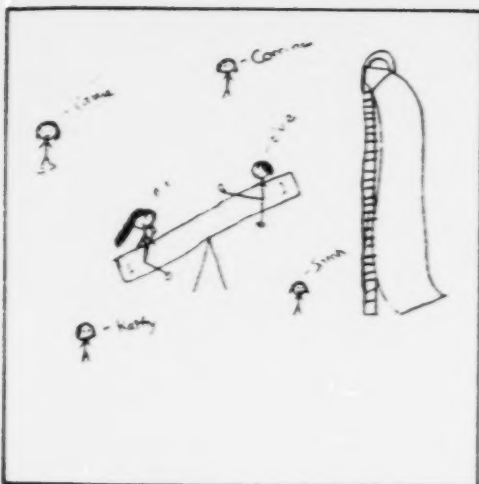
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Using History to Design Current Research: The Background of Clark's Drawing Abilities Test

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Clark's Drawing Abilities Test is a new instrument designed for visual arts education research and as a screening and identification test for use in gifted/talented education programs for artistically talented students. The test was first conceived in 1979 and development work is still underway. In 1980, I received a small research grant and worked with a graduate student in several related studies. We conducted an extensive review of art education and gifted/talented education literature in order to determine how the words *talent* and *talented* were used in these two education fields. We also collected a large number of commercially available tests that were purported to be of use in measurement of children's art abilities. These were analyzed in terms of their constructs, content, modes of administration, reliability and validity, intended audiences, and apparent usefulness. As this work continued, I became involved in another research project, with two colleagues, that required extensive analysis of the art education research and test development work of Norman C. Meier and his students and collection of as much information as possible about the history of inquiry and testing of children's art abilities. This latter project resulted in a book, *Understanding Art Testing: Past Influences, Norman C. Meier's Contributions, Present Concerns, and Future Possibilities* (Clark, Zimmerman, and Zurnuehlen 1987). This book contains several chapters in which we reported our extended study of how earlier researchers had collected children's art work, administered tests to determine various aspects of children's art development, and attempted to describe aspects of what children's art work looks like at different ages and levels of development.

These two parallel studies became intermixed and findings that emerged were used to augment both studies. When I was designing items, and it became possible to field test prototypic items for the drawing test being developed, it was obvious that information available from the historical studies could help me avoid obvious mistakes and could, in fact, direct practices to achieve desired outcomes. Needless to say, I took advantage of these opportunities, and reporting how these historical studies informed our present practices is the major focus of this paper.

Clark's Drawing Abilities Test: Antecedent Concerns

If it was to be possible to test talent, one of the first steps would be to clarify and define what would be able to be measured. That sounds relatively easy, but in fact turned out to be far more difficult than anticipated. An attendant problem was gross confusion about use of the terms *talent* or *talented* either globally (as in gifted/talented) or specifically (as in the gifted and talented). Those of us who work in arts education have been disturbed to see the terms *talent* and *talented* altered in meaning in the literature and nomenclature of gifted/talented education. Every use of the term *talented*, for instance, in the NSSE Yearbook, *The Gifted and the Talented: Their Education and Development* (Passow 1979), was in reference to students whose superiorities were in specific academic fields such as mathematics, physics, or biology. In contrast, the terms *talent* and *talented* are defined in most popular dictionaries in reference to "a special natural ability or aptitude" and give superiority in music or the visual arts as examples (e.g., Barnhart 1959; Mish 1984). Arts educators consistently have used these terms with this more popular meaning and now find themselves at odds with educators whose work is in the general area of gifted/talented education.

As in other arts fields, teachers' beliefs have made it difficult to resolve questions about definitions in visual arts education and about who may or may not be considered gifted/talented. Some art teachers believe, for instance, that all judgments about art, including assessment of students' art abilities, must be subjective and idiosyncratic. Others believe that all forms of testing or assessment in the arts must of necessity be unreliable and subject to question. These teachers believe that art expression is inherently idiosyncratic and, therefore, cannot be judged in ways that will be agreed upon by other art teachers or students (Sloan and Sullivan 1982). Another condition in visual arts education that has mitigated against clear definition of talented students is an almost total lack of standardized measurement instruments. There are available art tests that have been assessed in the testing literature, including the Meier (1929), Horn (1935), and Graves (1946)

tests, but it has been shown that these are not used in any gifted/talented identification program anywhere in the country and are not considered indicators of superior art abilities or "talent in art" (Clark and Zimmerman 1987).

What Talent Is Not

One of today's greatest difficulties facing administrators and program designers in gifted/talented education for visual arts students is the problem of mythology and definition. There are too many myths about talent or being talented and not enough knowledge grounded in practice that could be used to create educational programs; talent, for instance, is not simply an untutored or unlearned "gift" or natural endowment (Clark 1982). This awareness has been studied and reported by some researchers for over five decades. Meier, in 1942, summarized his more than fifteen years of study of artistically talented students and his claim that talent is linked with "constitutional stock inheritance" (Meier 1939, 140). Meier did not consider constitutional stock inheritance to be genetic, but an interlinked set of factors that included inherited, acquired, and learned characteristics (Meier 1939). Meier reported, for instance, that artistically talented students almost invariably have relatives who are involved in some aspect of the arts and may be influenced by and learn from such relatives. More recently, the work of David Henry Feldman has shown a need to reexamine how the ideology of talents is understood. His claim, based upon intensive study of prodigies, is that "one thing is clear. No matter how remarkable are the feats of child prodigies, these feats are not achieved without intensive, prolonged, educational assistance" (Feldman 1980, 125). These two researchers, and many others in between their disparate careers, have shown repeatedly that crucial factors in development of artistic talents are the interventions of teaching and learning; without them, inherent talents wither and die.

Another common misunderstanding is that talent in the arts is synonymous with "creativity" (Clark 1982). This problem has existed at least since the creativity emphasis that arose and blossomed in the 1950s and 1960s. Researchers and writers including Guilford (1950, 1957), Getzels and Jackson (1962), Parnes and Harding (1962), Torrance (1962, 1965), Wallach and Kogan (1965), Taylor (1964a, 1964b) and many others promulgated a conception of creativity that became popularized art education and was realized in art classrooms as "creative self expression" (Clark, Day, and Greer 1987). The basic belief was that children are inherently creative and would best be served in art classrooms in which there was a minimum of instruc-

tion with a maximum of available and diverse means of expression (Eisner 1972; Clark and Zimmerman 1984). It has only recently been reasserted that competent expression or superior abilities in the visual arts are dependent upon education and learning (Eisner n.d.; Clark, Day, and Greer 1987). Similarly, it is becoming clear that children who may appear to enjoy and seek opportunities for creating images when they are young lose interest and motivation for image making if they do not perceive discernable improvement in their efforts to create images. In other words, they lose interest in art making unless they are taught skills and abilities they feel are appropriate to their needs. Children *are* inherently creative if being creative is defined simply as making charming, childish images, images that are merely the result of maturation within a specific culture, such as X-ray drawings or drawings with several baselines (Wilson and Wilson 1982).

Researchers and writers who have questioned such a naive conception of creativity or its equation with talent or superior abilities in the visual arts include Barron (1972), Getzels and Csikszentmihalyi (1972), Getzels (1979), and Lazarus (1981). Lazarus reported, for instance, that test scores on the Torrance Tests of Creativity were found to correlate negatively with assessments of performance in a visual arts enrichment program. She suggested that the Torrance Tests of Creativity not be included among screening components for a visual arts enrichment program because of their lack of direct relevance to artistic creativity. Getzels discussed the role of creativity in the work of art students in ways compatible with how psychologists use the term *creativity* and what is measured by the Torrance tests and similar instruments, but these are in disagreement with how art educators have conceived of creativity. Getzel's claim is that perhaps the most significant differences among art students are their abilities to identify and solve problems in "creative" ways. In their report of research conducted by Getzels and Csikszentmihalyi (1972), they noted that image making abilities did not differ significantly among college age art students, but that creativity was demonstrated in their approaches to how they, as individuals, solved or posed problems. In other words, they observed "creative problem solving" among art students and claimed that this accounted more for noticeable differences of ability than any other observable trait.

Another misunderstanding that occurs most frequently at secondary and more advanced levels is the equation of talent as judged from a single mode of expression or aesthetic stance. Students who create the types of images a teacher likes are judged to be talented while students who create other types of images, even very well, are not. This practice, unfortunately, is quite common in high schools and many college art classes.

Students are put in a situation of creating art work that will please their teachers rather than being able to pursue their own style development. It is unfair and misleading for students to be told that their work will be rewarded only if it conforms to a teacher's expectations or that they do or do not have talent by application of that same criterion.

Defining and Extending the Meaning of Talent

For the purposes of this paper and the research that underlies it, the term *talent* is defined as a special, natural ability or aptitude for expression in one or more art forms. Notice that there is no mention here of unique, superior, or unusual abilities. This meaning seems to fit the needs of arts educators and helps explain differential abilities, including talent in the visual arts, but that is misleading. I have argued, in other places, that talent is normally distributed (Clark 1982; Clark and Zimmerman 1984). The argument is that many researchers have gathered distributed data in their studies of children's art work and a fair number have noted this phenomenon and gone on to claim that art abilities appear to be related to intelligence and/or normally distributed (Kik 1908; Ivanof 1909; Rouma 1913; Burt 1921; Hollingworth 1923, 1926; Tiebout and Meier 1936; Ziegfeld 1961; Gaitskell and Hurwitz 1970). Many of these researchers noted that art works created by more highly intelligent students were superior to those created by average or below average students. Hollingworth, for instance, observed that a high degree of intelligence was required in order for students to use advanced techniques or to make "meritorious" art. She claimed that creating representational images was possible for anyone who learned a few simple techniques but that creating images that involved or required higher order thinking, such as caricatures, political cartoons, or interpretive and expressive images, was an expression of a high degree of intelligence.

The model of talent as a normally distributed concept requires rethinking of the meanings of a great number of commonly accepted terms. It raises questions, for instance, about the meaning of the term *gifted and talented*. *Gifted* refers to a category of people who have superior scores on an IQ test or, to put it another way, whose scores occur in the highest range on an intelligence measure. If talent is normally distributed, however, the concept of talent is parallel to the concept of intelligence and does not designate people whose scores would occur in the highest range on a talent measure. The obvious implication is that *gifted and talented* as a unified term is a misnomer; the two words

are categorically different in meaning and designation. This raises all kinds of problems because we do not have a vocabulary of differentiated levels of talent, as we do for differentiated levels of intelligence.

People whose IQ scores fall within certain numeric values on a scale of intelligence often are labeled with designations such as "handicapped," "average," or "gifted." I realize there is much controversy about this practice and I am not endorsing labeling, but to know these categories and appropriate educational practices that attend them is to be in a better position to identify students' abilities and to help them learn. One difficulty that arises from the supposition that talent is normally distributed is that there is no similar differentiation of steps on the distributed scale of talent as there is for intelligence. The term *talent*, however, obviously does not refer to only superior levels on that scale and we have no alternative term or terms. The terms necessary for this purpose probably won't be developed until the normal distribution of talent, as conjectured here, has been established through research.

Purpose of This Research

It was the purpose of this research to develop and test a series of drawing tasks and a set of scoring criteria that could be used as a screening and identification instrument and as a research instrument in future inquiry designed to test the assumption of normal distribution of talent in the visual arts. Drawing tasks were chosen because they are easy to administer, could be grounded in previous research by others, and are considered fundamental to other art abilities by many visual arts teachers. Several years of inquiry about the history of research and testing in study of the development of children's abilities in the visual arts has revealed that children's drawings were the most frequently cited source of evidence in a vast majority of studies carried out in both Europe and the United States from the early 1800s to the present (Clark, Zimmerman, and Zurmuehlen 1987). Drawing with a pencil or crayon on paper is the most frequent art activity of most children and, therefore, is the least intimidating art exercise for a testing situation.

Over a period of nine years, from 1980 to 1989, I have field tested various drawing tasks in various combinations in local classrooms at different levels, from the fifth grade to college graduate classes. Subjects have included students in local elementary and secondary school classes, undergraduate and graduate college classes, and participants in a local summer institute for artistically talented students who are in elementary, junior, and senior high schools. These varied

groups were administered test items and studied in terms of their reactions as well as the test results. In this process, Clark's Drawing Abilities Test was adapted to its present form as four drawing tasks and the scoring criteria were adapted to their present form as thirteen criteria scored on a 1-5 point scale. From 1980 to 1983, several experimental versions of the drawing tasks and scoring criteria were tested; since 1983, the drawing tasks and scoring criteria have been refined in essentially their present form.

Clark's Drawing Abilities Test

Clark's Drawing Abilities Test consists of four items or tasks. The tasks have all been adapted or modified from similar tasks used in previous research by various persons. Study of previous inquiry revealed that certain drawing assignments seemed to reveal more, or were analyzed more thoroughly, than others. By careful assessment of such evidence, the four tasks used in Clark's Drawing Abilities Test were selected and tested. Maitland (1895), Lukens (1896), Ballard (1912), McCarty (1924), Kerr (1937), and Markham (1954), for instance, have all established that children prefer to draw human figures and houses as their first and second choices of preferred subject matters. These images are featured in the test. The items currently in use and their historical precedents are:

- Item 1. In the rectangle below, draw a picture of an interesting house as if you were looking at it from across the street. Make the best drawing you can. Use a #2 pencil and allow yourself no more than 15 minutes.
SOURCES: Thorndike (1913), Whitford (1919), McCarty (1920), Kline and Carey, (1922), Lewerenz (1927), Horn (1935), Lark-Horovitz (1942).
- Item 2. In the rectangle below, draw a person who is running very fast. Make the best drawing you can. Use a #2 pencil and allow yourself no more than 15 minutes.
SOURCES: Kline and Carey (1922), Lewerenz (1927), Lark-Horovitz (1942), National Assessment of Educational Progress (1977), Brent Wilson and Marjorie Wilson (private communication 30 November 1982)
- Item 3. In the rectangle below, make a drawing of you and your friends playing in a school yard. Make the best drawing you can. Use a #2 pencil and allow yourself no more than 15 minutes.
SOURCES: Whipple (1919), Horn (1935), Eisner (1967), National Assessment of

Educational Progress (1977), and many others who have asked subjects to draw a crowd scene of any kind.

- Item 4. In the rectangle below, make a fantasy drawing from your imagination, draw whatever you like. Be as creative as you wish with the use of your pencil. Make the drawing as interesting as you can. Use a #2 pencil and allow yourself no more than 15 minutes.

SOURCES: Lewerenz (1927), Lark-Horovitz (1942), Brent Wilson and Marjorie Wilson (private communication 30 November 1982), and many others who have asked subjects to make imaginative drawings.

The four tasks briefly described above call for demonstration of vastly different abilities and skills, and this may help explain their past popularity in research studies. Drawing a house demands a number of skills, including depicting perspective, textures, differential and meaningful shapes and sizes, recognizable details, and so on. Drawing a person running requires portrayal of action as well as body proportions and recognizable details. Drawing a group of persons on a playground demands portraying and composing receding space and groupings of figures in that space. The final, "fantasy drawing" task provides opportunities for subjects to use their imagination and portray whatever they like, including things they know and draw well.

It was in design and selection of these items that the importance of grounding current research in historical precedents was most apparent. Like many others, I had little realization of the vastness and character of early research about children's art abilities before I read the myriad of studies carried out both in Europe and the United States during the past hundred years. Beginning with Cooke's and Ricci's early studies of children's drawings reported in 1885 and 1887, people have been studying how children develop in their art making abilities. Beginning with development of the first art test, Thorndike's Scale For the Merit of Drawings By Pupils Eight to Fifteen Years Old (1913), the number of researchers using various art tests burgeoned into a major thrust in art education research (Clark, Zimmerman, and Zurmuehlen 1987). Many early researchers, such as Maitland (1895) and Partridge (1904), studied what children like to portray in their drawings and reported that images of houses and people are the most popular images children create. This information may partially explain why numerous early studies were based upon collecting and analyzing such images. A large number of scoring schemes have been reported that direct researchers in evaluating children's drawings of houses and people. Several of these, especially those cited with the above descriptions of test

items, were studied as background for the Scoring Criteria Scale developed for the Clark's Drawing Abilities Test.

Scoring Criteria Scale

Each drawing completed is assessed and assigned a score through use of a Scoring Criteria Scale. Accumulated scores of all four drawings are summed and each test booklet is assigned a resulting score. In this way, subjects within groups, such as all from one classroom or grade level can be rank ordered for assignment to different learning groups or for possible assignment to a visual arts education enrichment program. The Scoring Criteria Scale is based upon commonly used and understood properties of art works derived from the writings of DeWitt Parker (1926) and Harry Broudy (1972). These are:

1. SENSORY PROPERTIES

line	1-5*
shape	1-5*
texture	1-5*
value	1-5*

2. FORMAL PROPERTIES

rhythm	1-5*
balance	1-5*
unity	1-5*
composition	1-5*

3. EXPRESSIVE PROPERTIES

mood	1-5*
originality	1-5*

4. TECHNICAL PROPERTIES

technique	1-5*
correctness of solution	1-5*

* # 5 on each item is used to give credit for "unique, innovative, unusual" responses.

Use of a five point scale per item in the scoring criteria is common in test design and also has historical precedents. The practice is common in testing in general; it has been used in relatively recent art education instrument development research by Rouse (1965), Lewis and Mussen (1969), and Silver (1983). Rouse and Lewis and Mussen, in their respective research about describing art products or identifying artistic creativity, used a five-point scale per item in their research instruments. Rouse and Silver suggested grading each item response by a series of five descriptive statements, the technique used in this research. Lewis and Mussen used a scale of five steps as (1) excellent, (2) very good, (3) moderate, (4) poor, and (5) very poor.

The five point scale used in the Scoring Criteria Scale yields an 11-60 point range of scores per item and a 44-240 point range of scores per test. This scale is sensitive to graded differences among students at the same grade or age level. It yields scores that differentiate between poor, below average, average, above average, and superior responses in all groups at the targeted age range, from ten years old to adult.

Use of the Test in the Institute

In the course of processing applications to the IU Summer Arts Institute, a great deal of information is recorded about each applicant. This includes age, grade, and gender, and this information is then used to assign each participant in the Institute an identification number that subsequently is used to code Clark's Drawing Abilities Test booklets. The test has been administered on the first night participants arrive at the Institute.

In 1984, the drawing test was administered in conjunction with the Children's Embedded Figures Test (CEFT) (Karp and Konstadt 1963). CEFT results were used as a validity check and to answer questions raised in previous research about the relationship of dimensions of cognitive style and art making abilities of school age children (Rouse 1965; Zimmerman 1983). Each year Clark's Drawing Abilities Test has been used with students in the IU Summer Arts Institute (1984-1989), teachers in the Institute have been asked to rank order all students in their classes on the basis of their perception of success in each class. Because students participate in three classes, each is rank ordered by three different teachers. This information also is compiled and coded and used when test results are reported and analyzed. Feldhusen, Asher, and Hoover (1984) have recommended that such rankings are valuable evidence of the effectiveness of screening and/or identification devices used in a program. The information is used in this way by the Institute and also as a correlate of results obtained through administration of Clark's Drawing Abilities Test.

In Table 1, results are shown for a multiple correlation of most of the variables discussed in the previous paragraphs. Subjects were all participants in the IU Summer Arts Institute in 1984, 1986, 1987, and 1988. As indicated, CEFT results (identified as "field") are reported only for 1984; all other data in Table 1 represents accumulated data from four summers.

Examination of Table 1 reveals that every correlation reported there is significant at or beyond the .05 level except the grade/field correlation. This lack of correlation can be explained in that superior abilities

TABLE 1
Correlations of Age, Grade, Children's Embedded Figures Test Scores,
Teacher Ratings, and Clark's Drawing Abilities Test Scores

<i>N</i> = 177					
	AGE	GRADE	FIELD#	RATE	TEST
AGE		.917 <i>p</i> ≤ .00	.294 <i>p</i> ≤ .02	.175 <i>p</i> ≤ .01	.702 <i>p</i> ≤ .00
GRADE			.189 <i>p</i> ≤ .10	.180 <i>p</i> ≤ .01	.191 <i>p</i> ≤ .01
FIELD#				.241 <i>p</i> ≤ .05	.309 <i>p</i> ≤ .02
RATE					.197 <i>p</i> ≤ .01
TEST					

"field" recorded in 1984 only, *N* = 50.

within an age group or group assigned to a particular grade are dispersed and would not reflect a more typical age or grade progression of lower scores for younger students and higher scores for older students. In the first two years the drawing test was used with Institute participants, age was not correlated significantly with test results, for the same reason. As test results from more years and greater numbers of subjects have been added to the data base, this interesting finding has dissipated. All other correlations have remained significant throughout all of the summers that more and more data have been added to the matrix.

Conclusions

That the test results have been significantly correlated with teachers' ratings every year that such data has been collected is an important finding. Teachers

who work for the IU Summer Arts Institute are selected through a process of application, submission of portfolio, and an interview with a director of the Institute. They are nearly always faculty members in the School of Fine Arts at Indiana University who are chosen because they represent studio expertise of a kind gifted students should be exposed to and offered opportunities to study and learn. These teachers have no awareness of the drawing test and, in fact, are not aware that it has been administered to their students. Their own assessments of student performance are not collected until the last day of the Institute and they are allowed to use their own criteria of success in each class they teach. On this basis, the strength of the test/teacher-rating correlation (.01) is highly significant. It shows that results on Clark's Drawing Abilities Test predicts performance in the Institute's classes at a high rate (99%) of dependability. Classes in the Institute have included many two-dimensional visual arts media, such as drawing,

painting, and photography, and the test/rating correlation obtained may be said to be expected. In addition, the Institute includes three-dimensional classes, such as ceramics and sculpture and classes in other art forms, such as computer graphics, theater, and dance. The significant correlation holds for these classes even though they may not draw upon the same skills and abilities a participant would use when making drawings.

Because this test development study was based upon the history of previous research of many others, it has been effective in attaining its intended goals. The question now is, what will happen in the future? The first step will be to prepare a Test Manual in which many of the findings associated with use of the test will be reported. Such a manual will make it possible for others to use the test and contribute to the findings associated with it. Hopefully, use of the test by others will include administrations to larger, more representative populations that will make it possible to prove or disprove the claim that talent, at least in the visual arts, is normally distributed.

Another anticipated step will be preparation of a series of illustrated scales, as used previously by Whitford (1919a, 1919b), Eisner (1967), and others, that will facilitate grading test booklets administered to particular age groups or grade levels. Categories used in a previous study of children's figural drawings by Koppitz (1968) will be used to create graded scales with illustrations; these categories are "common," "expected," "not unusual," and "exceptional." Such illustrated scales will help future users recognize and anticipate how children's responses on Clark's Drawing Abilities Test can be expected to look.

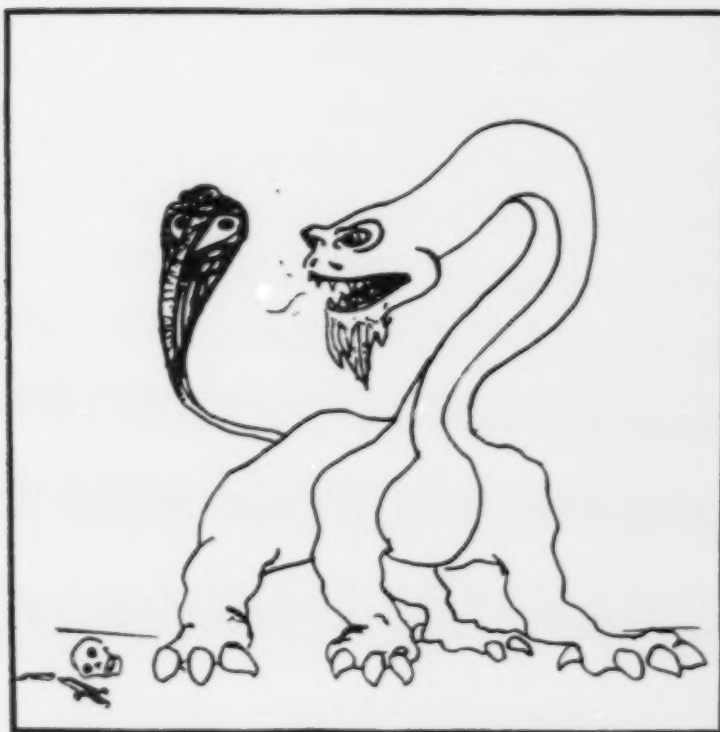
Such development in the future will continue and be guided by historical precedents, as was the development work completed up to this point in time. It has been obvious that knowledge of what has happened in past inquiry and testing about the study of children's art abilities has greatly facilitated this research. I cannot recommend too highly that researchers beginning their current research should turn to as many historical precedents as possible, not as a required "search of the literature," but as guidelines for research design and methodology and as a source of validated information and inspiration.

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Screening and Identifying Gifted/Talented Students in the Visual Arts with Clark's Drawing Abilities Test

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There are a number of problems about identification procedures generally used in arts programs for gifted/talented students and specific problems with identification of gifted/talented students in the visual arts. Part of these problems are procedural, some are attitudinal. This article outlines several years of research conducted at Indiana University (IU) that has been designed to alleviate or circumvent these problems. The major thrust of this research has been design and testing of a new achievement-type test in the visual arts, Clark's Drawing Abilities Test (CDAT). This research has led to development of the new instrument and of a standardized Scoring Criteria Scale used to score the instrument. The CDAT has been used in a series of field testing situations and specifically with students entering the Indiana University Summer Arts Institute. Findings from field tests and use of the instrument with IU Summer Arts Institute students are discussed and their implications for more efficient and effective identification of artistically gifted/talented students in the visual arts are reported.

One of the newer demands on people working with gifted/talented education in schools is to identify and provide programs for several categories of gifted/talented students that differ significantly from traditional categories of intellectually or academically superior students. These categories include leadership, creative or productive thinking, and the visual and performing arts. A conundrum presented by this new demand is that none of these categories is exclusive; there are many

students who can and do operate well in several or all of them. This, of course, raises many questions about methods of identification and about designing appropriate programs in an effective education program for gifted/talented students.

Identification Procedures and Problems

An increasingly popular recommendation and practice is to expect an efficient and effective identification program to include use of at least three identification procedures that differ in kind, a practice called the **multiple criteria model** (Van Tassel-Baska, 1984; Gallagher, 1985). In other words, reliance upon such common indicators as a single IQ score of achievement test score as an identification criterion is discouraged or banned in many communities and states. Similarly, reliance upon even a complex battery of tests, if the tests measure similar traits, is discouraged or not permitted. In programs for gifted/talented students in the visual and performing arts, the most common procedures used to identify such students have been to ask for a self-nomination, a portfolio or recorded performance, and/or an interview (Clark & Zimmerman, 1984). These three procedures differ in kind, but two have characteristics that make them expensive and impractical for many schools.

Self-nomination is not a problem because, in most instances, applicants simply fill out a form or write a letter. Being asked to present a portfolio or recorded performance or to attend and participate in an interview may place unfair demands on many students. There are more potential candidates for artistically talented programs who have few resources or background that would help them compete with more advantaged students in such presentations or interviews. Almost no elementary and few middle or senior high schools offer a portfolio preparation class; if one is available, it is seldom offered before the last year of high school. In addition, many students are not able to afford the economic resources necessary for presentation of a competitively viable portfolio or recorded performance. Opportunities for interviews, if they are offered at all, often demand travel and time commitments that also may be beyond the resources of many students. Despite these problems, interest in

providing programs for artistically talented students has increased dramatically in the last decade.

Identifying Talented Students in the Visual Arts

There has been a renewed interest in gifted/talented education in the 1980s because newer definitions of which students might qualify as gifted/talented and new definitions of what education for gifted/talented students can mean have created new opportunities for students and teachers. At the same time there are new problems to be solved. Definition is one of those problems. In 1972, the Marland Report stipulated new audiences for gifted/talented education. In its recommendations for legislation, most of which have become law, the term **gifted and talented** was defined as children or youth at preschool, elementary, or secondary levels who have potential for, or have demonstrated, superior abilities in intellectual, creative, academic, leadership, or visual and performing arts activities. It also stipulated that such students require services not ordinarily provided by the schools (Marland, 1972).

For several years after this influential set of recommendations was published, people administering or otherwise involved in programs for education of gifted/talented students began to revise their conceptions of gifted/talented education and question their past practices. There have been attempts to serve these new audiences across the country, defined by emerging state and local statutes that often were in concert with or echoed Marland Report categories (Zettel, 1979). This, of course, raised inevitable questions about who behaves creatively, demonstrates leadership, or appears to be gifted/talented in the visual and performing arts, and how might they be identified. Most extant programs had already stipulated definitions for more typical categories of intellectual or academic giftedness, but these often were local and idiosyncratic. There clearly was no agreed upon definition or definitions at either state or national levels even for these traditional categories of gifted students (Zettel, 1979; Feldhusen, Asher, & Hoover, 1984). The question of definition remains unresolved as IQ-based definitions are questioned and the additional Marland Report categories of gifted/talented students are clearly there to be served.

An attendant problem in gifted/talented education in the arts is gross confusion about use of the words *talent* or *talented* either globally or specifically. Those of us who work in arts education are disturbed to see the words *talent* and *talented* altered in meaning in the literature and nomenclature of gifted/talented education. Almost every use of the word *talented*, for instance, in the highly influential NSSE Yearbook, *The Gifted and the Talented: Their Education and Development* (Passow, 1979), referred to students whose superiorities were in traditional academic fields such as chemistry, mathematics, biology, or language arts. In contrast, the words *talent* and *talented* are defined in most popular dictionaries in reference to special natural abilities or aptitudes and give as examples superiority in music or the visual arts (i.e., Barnhart, 1959; Mish, 1984). Arts educators consistently have used the terms with this more popular meaning related to superior performance in the arts and now find themselves, unfortunately, at odds with many educators who work in gifted/talented education.

The work reported here addresses many of these questions just raised: directly and indirectly. As in other arts fields, art teachers' beliefs have made it difficult to resolve questions about definition of gifted/talented performance in the visual arts and about who may or may not be considered gifted/talented. Some art teachers believe, for instance, that all judgments about art, including assessment of students' art abilities, must be subjective and idiosyncratic; others believe that all forms of testing or assessment in the arts must be unreliable and subject to question (Sloan & Sullivan, 1982). These teachers believe that art expression is inherently idiosyncratic and, therefore, cannot be judged in ways that will be agreed upon by other art teachers or students.

Another condition in visual arts education that has limited a clear definition of talented students is an almost total lack of standardized tests or identification instruments. There are available art tests that have been assessed and, in some instances, recommended in the gifted/talented literature, including the Meier (1929, 1942, 1963), Knauber (1932, 1933), and Horn (1935, 1953) tests (Khatena 1982). However, as demonstrated by others, these tests are not used in identification programs for artistically talented students anywhere in the country and they are not considered indicators of superior art abilities (Clark

& Zimmerman, 1987). This judgment is based upon the dated nature of illustrations and scoring methods used in these older tests and upon the fact that they were never intended as diagnostic of superior abilities in the arts.

Clark and Zimmerman (1987) have shown that the five most commonly and frequently used identification procedures in programs for gifted/talented students in the visual arts are self nomination 51%, portfolio review 47%, interview 27%, informal art tests 25%, and classroom teacher nomination 25%. These frequencies add to more than 100% because most of these practices are used in combinations with one another or with others. All other procedures reported were used with a less than 20% frequency (Clark & Zimmerman, 1984). Some disadvantages of portfolio review and interview as identification procedures have been discussed briefly. Informal art tests (tests designed and administered by local art teachers) and unstructured classroom teacher nominations also have been shown to have disadvantages because such tests generally are idiosyncratic and graded by subjective criteria that are unknown to the applicants. Similarly, unstructured classroom teacher nominations often are idiosyncratic and fail to identify giftedness in as many as 80% of cases (Pegnato & Birch, 1959; Boston & Orloff, 1980).

Purpose of This Research

It was the purpose of the research reported here to develop and test a series of drawing tasks and a set of scoring criteria that could be used as a screening and identification instrument and as a research instrument for future inquiry. Drawing tasks were chosen because they are easy to administer, could be grounded in previous research by others, and are considered fundamental to most other art abilities by many visual arts teachers. Clark, Zimmerman, and Zurmuehlen (1987) recently reported a history of research and testing and its relationship to studies about the development of children's abilities in the visual arts. It was apparent from this inquiry that children's drawings were the most frequently cited source of evidence in a vast majority of studies carried out in both Europe and the United States from the early 1800s to the present. Drawing with a pencil or crayon on paper is the most frequently exercised art activity of most children and, therefore, the least

intimidating art exercise for a testing situation.

Test Development

Over a period of eleven years, from 1980 to the present, various drawing tasks have been field-tested in local classrooms from the fifth grade to college graduate classes. Subjects included students in local elementary and secondary school classrooms, undergraduate and graduate college classes, and participants in a local summer institute for artistically talented students. These groups were administered various test items and studied in terms of their reactions as well as the test results. In this process, the CDAT was modified to its present form as four drawing tasks with a scoring scale of 13 criteria scored on a scale of 1-5 points per item. From 1980 to 1984, several experimental versions of the drawing tasks and scoring criteria were tested; since 1984, the drawing tasks and scoring criteria were refined to essentially their present form with modest adaptations.

In 1989, results of a 1984 experimental use of the CDAT were analyzed and reported demonstrating that the test was highly effective in both screening and identifying gifted/talented students in the visual arts who were selected to attend the Indiana University Summer Art Institute (Clark, 1989). The 1984 results showed that test scores consistently correlated with teachers' ratings of student success in various art classes in this summer institute at a greater than .01 significance level (see Table 1). In that study, test results on the CDAT also were compared to test results on the Children's Embedded Figures Test (CEFT) (Karp & Konstadt, 1963) as a measure of validity; this correlation was significant at the .02 level. CEFT results also were used to answer questions about the relationship of dimensions of cognitive style and art making abilities of school age children raised by Rouse (1963), Zimmerman (1983), and others. Split-half reliability also was calculated, using the Guttman Split Half formula, and yielded a correlation at the .01 level of significance (Clark, 1989). These findings obviously were sufficiently accurate to encourage further explorations of use of the test with additional subjects.

From 1985 to 1990, the test was judged experimentally to assess its possible effectiveness as a diagnostic and/or placement instrument for students

Age	Grade	CEFT	Rating	Draw 1	Draw 2	Draw 3	Draw 4
AGE	.81* p=.00	.29* p=.02	.21 p=.07	.12 p=.21	-.06 p=.34	-.07 p=.32	.06 p=.35
GRADE		.19 p=.10	.24* p=.04	.13 p=.17	-.07 p=.32	-.07 p=.31	.15 p=.15
CEFT			.24* p=.05	.36* p=.01	.29 p=.12	.27 p=.13	.32* p=.01
RATING				.34* p=.01	.35* p=.01	.37* p=.01	.39* p=.01
DRAW 1					.73* p=.00	.69* p=.00	.61* p=.00
DRAW 2						.81* p=.00	.65* p=.00
DRAW 3							.71* p=.00
DRAW 4							

Table 1. Pearson Correlation Coefficients Among Age, Grade, Children's Embedded Figures Test Scores, Teacher Ratings, and Scores on Items 1-4 on Clark's Drawing Abilities Test in 1984. N=60. $\leq .05$ significance level.

in the Indiana University Summer Art Institute. Applicants and their parents or guardians, and an art teacher, classroom teacher, or principal file nomination forms. Applicants also file a letter of application explaining why they hope to attend the Institute. The CDAT was *not* used as a selection instrument, but administered on the night students arrived and before they attended any of their classes. As in 1984, teachers ranked their students as *superior*, *above average*, *average*, *below average*, and *poor* regarding successful classroom performance at the conclusion of the two-week Institute. Measuring program success this way is recommended as a check on identification and selection procedures for gifted/talented programs by Feldhusen, Asher, and Hoover (1984):

In order to validate the identification process, data must be collected which indicates that the instruments used to identify students do indeed predict success in the gifted program. Correlations of identification instruments with criteria of success in the program will indicate if there is accurate identification. (p. 151)

Because each participant attended three

different classes each summer, students were rated by three different teachers. Teachers established criteria of successful performance in class on the basis of attaining objectives established for each class.

Clark's Drawing Abilities Test

Clark's Drawing Abilities Test (CDAT) consists of four items or tasks. All of these tasks were adapted or modified from similar tasks used in previous research. Each item calls for differing delineation skills or conceptions because previous research indicates that similar drawing assignments seemed to discriminate art abilities more effectively than others. By careful assessment of such evidence, the four tasks used in the CDAT were selected and tested. Maitland (1895), Lukens (1896), Ballard (1912), Kerr (1937), Markham (1954), and others reported that children like to draw human figures and houses as first and second choices of preferred subject matters. These images are featured in the CDAT. The items currently in use and their historical sources are:

ITEM 1. *In the rectangle below, draw a picture of an interesting*

house as if you were looking at it from across the street. Make the best drawing you can. Use a #2 pencil and allow yourself no more than 15 minutes.

SOURCES: Kerschensteiner (1905), Thorndike (1913), Kline & Carey (1922), Lewerenz (1927), Kerr (1937), Lark-Horovitz (1942), Buck (1948), Markham (1954), and Koppitz (1968).

ITEM 2. *In the rectangle below, draw a person who is running very fast. Make the best drawing you can. Use a #2 pencil and allow yourself no more than 15 minutes.*

SOURCES: Schuyten (1904, 1907), Lobsein (1905), Kerschensteiner (1905), Kline & Carey (1922), Lewerenz (1927), Lark-Horovitz (1942), Buck (1948), and NAEP (1977).

ITEM 3. *In the rectangle below, make a drawing of you and your friends playing in a school yard. Make the best drawing you can. Use a #2 pencil and allow yourself no more than 15 minutes.*

SOURCES: Barnes (1893), Wulff (1927), Eisner (1967), NAEP (1977), and many others who have asked subjects to draw a crowd scene of any kind.

ITEM 4. *In the rectangle below, make a fantasy drawing from your imagination, draw whatever you like. Be as creative as you wish with the use of your pencil. Make the drawing as interesting as you can. Use a #2 pencil and allow yourself no more than 15 minutes.*

SOURCES: Kerschensteiner (1905), Stern (1907), Stern, Kohler & Verworn (1908), Lewerenz (1927), Lark-Horovitz (1942), and many others who have asked subjects to make imaginative drawings.

Scoring Criteria Scale

The first four categories of properties of drawings on the Scoring Criteria Scale are based upon attributes of art works that many teachers use for instruction derived from the writings of Harry Broudy (1972). The Title category, used only on Item 4,

resulted from the work of Torrance (1966) and Silver (1983). The scoring criteria are:

Sensory Properties	
line	1-5 ¹
shape	1-5
texture	1-5
value	1-5
Formal Properties	
rhythm	1-5
balance	1-5
unity	1-5
composition	1-5
Expressive Properties	
mood	1-5
originality	1-5
Technical Properties	
technique	1-5
correctness of solution	1-5
Title	
Appropriateness	1-5

Each completed drawing is assessed and assigned a score using the Scoring Criteria Scale. Accumulated scores of all four drawings are added and each test booklet is assigned the resulting sum of scores. In this way, subjects within groups, such as all from one classroom or grade, can be rank ordered for assignment to different learning groups or for possible assignment to a visual arts education enrichment program. Use of a five-point scale per item also is based upon historical precedents. The practice is common in testing in general; it has been used in relatively recent art education instrument development research by, among others, Rouse (1968), Lewis and Mussen (1969), and Silver (1983). These researchers, in their respective research about describing art products (Rouse) or identifying artistic creativity (Lewis & Mussen), used five point scales per item in their research instruments. Rouse and Silver graded item responses on their respective instruments with a series of five descriptive statements with differentiated values, the technique used to score the CDAT.

The five-point scale used in the Scoring Criteria Scale yields a 13 - 65 point range of scores per item and a 52 - 260 point range of scores per test. This scale is sensitive to graded differences among students at the same grade or age level. Items and descriptors discriminate different drawing abilities at varying developmental levels within the same age or grade. Scores differentiate between *poor*, *below average*, *average*, *above average*, and *superior* responses in all groups at the targeted age range, from 10 years old to adult.

Agreement among several sets of judges with varying degrees of experience with children's drawings ranged from .861 in 1986 to .935 in 1989. The judges included the authors and art education graduate students; their teaching experience ranged from zero to 19 years. Most had no experience with this kind of assessment of children's drawings. The judgement figures indicate a high degree of agreement each year among groups of three or more judges who worked alone after a one-hour training session. This high degree of agreement raises serious questions about the mythology that judging children's art work is always idiosyncratic or subjective, and points out how much agreement art teachers really share when they carefully evaluate children's art work.

In the course of processing applications to the IU Summer Arts Institute, several items of information about each applicant are recorded, including age, grade, and gender. This information is used to assign each participant a unique identification number recorded on the CDAT booklets; any other identifying information is removed before they are graded or examined by staff members of the institute or others.

Findings and Discussion

Results are shown in Tables 1 and 2 from multiple correlations of most of the variables discussed. Subjects were 50 participants in the IU Summer Arts Institute in 1984 (Table 1) and 177 participants in 1986, 1987, and 1988 (Table 2). That CDAT results significantly correlated with teacher's ratings and in a consistent pattern is an important finding. This demonstrates that it is possible to evaluate and categorize drawing abilities into several levels of performance and to identify students with

superior abilities with a simple test instrument.

Teachers at the IU Summer Arts Institute are selected through an application process, submission of portfolio, and an interview with an Institute director. They are nearly always faculty members in the School of Fine Arts at Indiana University who are selected because their studio expertise and teaching abilities are considered appropriate for students who are gifted/talented in the visual arts.

Institute teachers are not aware of the drawing test or that the test was administered to their students. Their own assessments of student performance are not collected until the last day of the Institute, after they have had many opportunities to observe their students and critique their work in progress. On this basis, the strength of the test-teacher-rating correlation (.01 level of significance) is particularly telling.

Classes in the Institute included many two-dimensional visual arts media (such as drawing, painting, and photography); a high test-rating correlation is expected for these groups. The Institute also includes three-dimensional classes (such as ceramics and sculpture) and classes in other art forms (such as computer graphics, theater, and dance). Significant correlations also hold for these classes in other means of expression, even though they may not draw upon the same skills and abilities a participant would use when making drawings.

In Table 1, each drawing test task is listed separately because one of the problems being investigated at that time was the nature of intercorrelation of the drawing tasks. The finding of <.00 significance level was not expected; those of us working with the test had observed, informally, that Item 4, the Fantasy Drawing task, often evoked observably different results than the three previous, structured items. It was predicted that Item 4 results would differ significantly from the others, but this was not true and, in fact, all of the item intercorrelations were significant.

In 1984, there were only 50 subjects in the research population and this, apparently, caused an interesting result. The age of subjects was not significantly correlated with test results, which was explained as an effect of differential abilities among the artistically talented subjects who participated at that time (Clark, 1989). With a larger population (see Table 2), this effect disappeared, as

¹On each item, 5 is used to give credit for unique, innovative, and unusual responses.

expected. This research revealed that the average score for each grade level tested generally increased. In 1988, for instance, the mean score for each grade level was: seven 144.4; eight 111.3; nine 133.9; ten 139.2; and eleven 146.7 (similar patterns, including some irregularities based upon the small size of each sample, were obtained each year). As data from public school groups also indicate, drawing ability is positively effected by physical maturation that is an outgrowth of increased age. On the other hand, students without instruction and continuing experiences in drawing often revert to less mature abilities; this effect increases over time as they do in all school subjects.

	Age	Grade	Rate	Test
AGE		.917*	.175*	.702
		p=.00	p=.01	p=.00
GRADE			.180*	.191*
			p=.01	p=.04
RATE				.197*
				p=.01
TEST				

Table 2. Correlations of Age, Grade, Teacher Ratings, and Clark's Drawing Abilities Test Scores in 1986, 1987, & 1988. N = 177. $\leq .01$ significance level.

All comparisons in Table 2 are significantly correlated at a .01 level. This is an exciting result in that it verifies the tentative findings reported in Table 1 as well as the earlier claims that the CDAT works effectively and efficiently to screen and/or identify students for possible placement in visual arts enrichment or acceleration programs. The test also can be used to create instructional groups with differential abilities for improved instruction in visual arts classes.

The CDAT is effective for screening or identifying candidates for gifted/talented programs in the visual arts. The test also is used to research other questions, such as the assertion that visual arts talent is normally distributed (Clark, 1982) and that visual arts talent and intelligence are highly correlated (Hollingworth, 1923; Vernon, Adamson, & Vernon, 1972). Teachers, program coordinators, and other school personnel may find this test useful for screening and identifying students for

participation in any form of visual arts enrichment program. The data presented offer clear evidence of the effectiveness of the CDAT in gifted/talented education.

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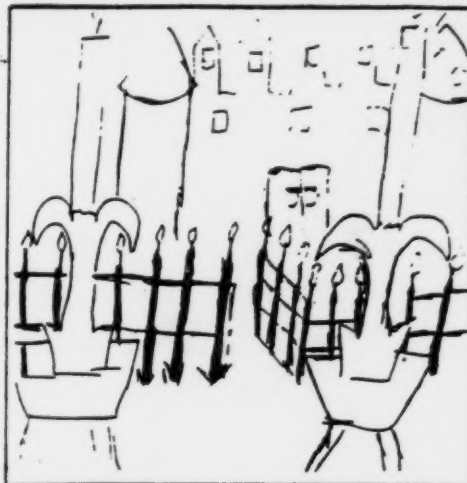
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BELOW AVERAGE



BELOW AVERAGE



AVERAGE



AVERAGE



ABOVE AVERAGE



ABOVE AVERAGE

CLARK'S DRAWING ABILITIES TEST:**Test Administration Protocol**

Administration of Clark's Drawing Abilities Test is easy and can be accomplished in little more than an hour. Each item requires 15 minutes; test instructions may consume an additional 15 minutes. The easiest way for students to take the test is to be seated at desks or tables where they will have a flat surface to work.

Required materials

Basically, the only required materials are one test booklet and one sharpened, #2 pencil with an eraser for each student. It is advisable to have an extra supply of sharpened pencils equal in number to about 10% of the group. If possible, you should have class monitors assigned to pass out and collect the test materials.

It is advisable to have the name of the school, local community, two letter state abbreviation (ie. IN for Indiana, etc.), and your name printed on a chalkboard or other visible display space in the room for those students who may need this information.

Test Administration

After students are seated, pass out test booklets and pencils (Use monitors for this if possible). Say, "Today you will be taking a drawing test. It only has four items. You will have 15 minutes to complete each item. Do the best work you can and keep working on each drawing until I tell you to stop."

"On the front of your test booklet, there is a place for your name. Please print your first and last name in this place. On the second line, please print your birth date." Ask students to use two-digit day, month, year symbols. Be sure to check these before sending the tests to be graded. Many students are not sure of their birthday. "On line three, print today's date. Once again, ask students to use two-digit day, month, year symbols. Be sure this is on the chalkboard in this form. "

On the fourth line, print the name of this community and the abbreviation for this state. Please print (say the name of the school) and the state abbreviation. "Please use only our two-letter State abbreviation (say the two letters)."

"On line five, print my name." Say the name you want recorded here and point it out on the chalkboard; this may be the name of an art teacher, regular classroom teacher, or a subject matter specialist. The test booklets will be returned addressed to this name.

On the next line, line six, print the name of this school." On line seven, print

your present grade level and Room number."

During administration of the test, tell students, "This is a timed test. Do not open the booklet until told to do so and do not turn any pages of the booklet until told to do so." After being sure that all students have booklets and pencils, say "Open your booklet to item #1. You will see a large empty space on that page. In that space, draw a picture of an interesting house as if you were looking at it from across the street. Make the best drawing you can. Use only the pencils we distributed. If your pencil breaks, hold it up in the air. Someone will come around and give you another. Are there any questions?"

Answer questions briefly, by repeating the instructions if necessary. If there are no questions, proceed. Say, "You have 15 minutes to complete this drawing. You may begin." Record the time on a note pad in front of you. At the end of ten minutes, say "Ten minutes are up. If you have not finished, you have 5 minutes more. If you have finished, use this time to improve your drawing. Draw a background around the house you have drawn."

At the end of 15 minutes, say "STOP! Turn the page to item 2. You will see a large empty space on that page. In that space, draw a person who is running very fast. Make the best drawing you can. Use only the pencils we distributed. If your pencil breaks, hold it up in the air. Someone will come around and give you another. Are there any questions?"

Answer questions briefly, by repeating the instructions if necessary. If there are no questions, proceed. Say, "You have 15 minutes to complete this drawing. You may begin." Record the time on a note pad in front of you. At the end of ten minutes, say "Ten minutes are up. If you are not finished, you have 5 minutes more. If you have finished, use this time to improve your drawing. Draw a background around the person you drew. DO NOT turn back to your previous drawing."

At the end of 15 minutes, say "STOP! Turn the page to item 3. You will see a large empty space on that page. In that space, make a drawing of you and some of your friends playing in a playground. Make the best drawing you can. Are there any questions?"

Answer questions briefly, by repeating the instructions if necessary. If there are no questions, proceed. Say, "You have 15 minutes to complete this drawing. You may begin." Record the time on a note pad in front of you. At the end of ten minutes, say "Ten minutes are up. If you are not finished, you have 5 minutes more. If you have finished, use this time to improve your drawing". DO NOT turn back to any

previous drawings,"

At the end of 15 minutes, say "STOP! Turn the page to item four. You will see a large empty space there. In that space, make a fantasy drawing from your imagination. Be as creative as you wish and draw whatever you like. Make your drawing as interesting as you can. Are there any questions?"

Answer questions as before or, if there are no questions, say, "You have 15 minutes to complete this drawing. You may begin." Record the time on a note pad in front of you. At the end of ten minutes, say "Ten minutes are up. If you are not finished, you have 5 minutes more. If you have finished, use this time to improve your drawing. DO NOT turn back to any other drawing.

At the end of 15 minutes, say "STOP! Close your test booklet and put down your pencil." Look around the room to be sure everyone has carried out these instructions. Say, "Pass your closed test booklets to the end of each aisle on the (right or left) side." Have monitors ready to collect the booklets. Say, "Pass your pencils to the (right or left) side." Have monitors ready to collect the pencils.

Thank students for their participation and excuse them to return to their normal school routine.

..... Preparing test booklets to be graded

Please scan the first page of every test booklet. Correct misspellings or incorrect information. It is important that correct birthdates are shown on the front page of the test booklets; grading is based upon norms established for specific age groups. Be sure that a CORRECT birthdate and test date is recorded on each booklet before returning the booklets for grading.

In the four open lines beneath line seven, on the front page of the booklets, teachers are asked to record optional information if it is available. Basically, the most important information requested is the name of any standardized tests used in your school district at your students' grade level. If possible, a score for each student on each standardized test is to be reported. This information will be used, if it is available, as a reliability check.

Finally, before the booklets are returned for scoring, a six digit identification number must be recorded on the first page of each test booklet, by the teacher. These numbers will look like this: 95-24-13-08. The first two digits will designate the year the test was administered; "95" = 1995. The second two digits will consist of a two-number identification code assigned to each student. Use an alphabetical roster and assign numbers in numerical order from 01 - 99; "24" = a specific student in a class). The next two digits will report

student age in years; "13" = thirteen years old. The final two digits will report what grade level the student is in at the time the test is administered; "08" = grade eight.

This identification number will be recorded on each booklet page and the persons who grade the tests will NOT see the front page with each student's personal information.

Thank you for your cooperation in this preparation of booklets to be graded.

When all test booklet preparation has been completed and checked for accuracy, they should be returned to:

A.R.T.S. Publishing Co., Inc.

3240 N. Ramble Road East

Bloomington, IN 47408-1093

C D A T.

CLARK'S DRAWING ABILITIES TEST

YOUR NAME _____

YOUR BIRTHDAY _____

DATE _____ ID# _____

COMMUNITY _____ STATE _____

TEACHER _____

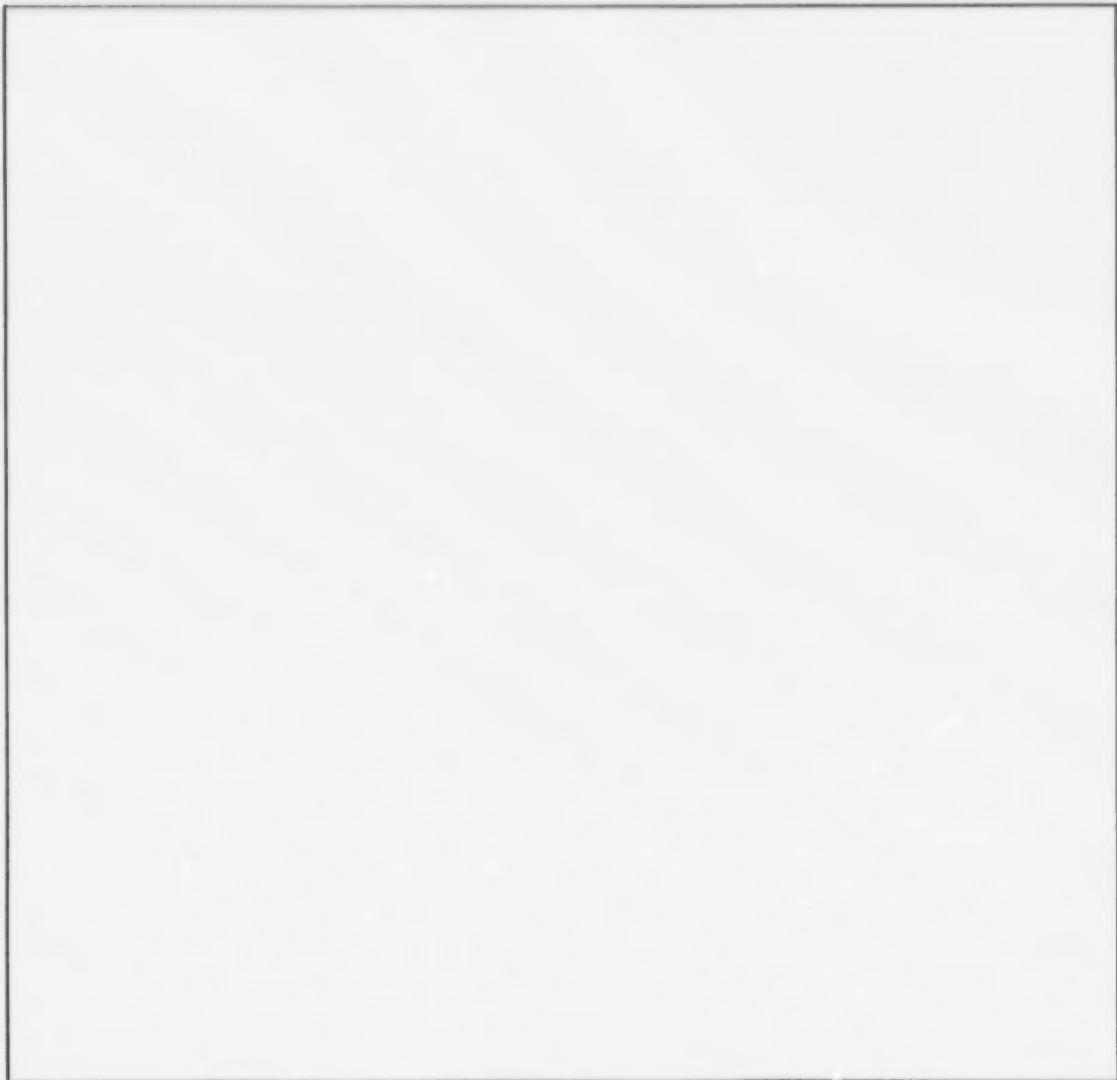
SCHOOL _____

GRADE _____ ROOM _____

C D A T.

CLARK'S DRAWING ABILITIES TEST

ITEM 1. IN THE SPACE BELOW, DRAW A PICTURE OF AN INTERESTING HOUSE AS IF YOU WERE LOOKING AT IT FROM ACROSS THE STREET. MAKE THE BEST DRAWING YOU CAN. USE A #2 PENCIL AND ALLOW YOURSELF NO MORE THAN 15 MINUTES



C D A T.

CLARK'S DRAWING ABILITIES TEST

ITEM 2. IN THE SPACE BELOW, DRAW A PERSON RUNNING VERY FAST.
MAKE THE BEST DRAWING YOU CAN.
USE A #2 PENCIL AND ALLOW YOURSELF NO MORE THAN 15 MINUTES



C D A T.

CLARK'S DRAWING ABILITIES TEST

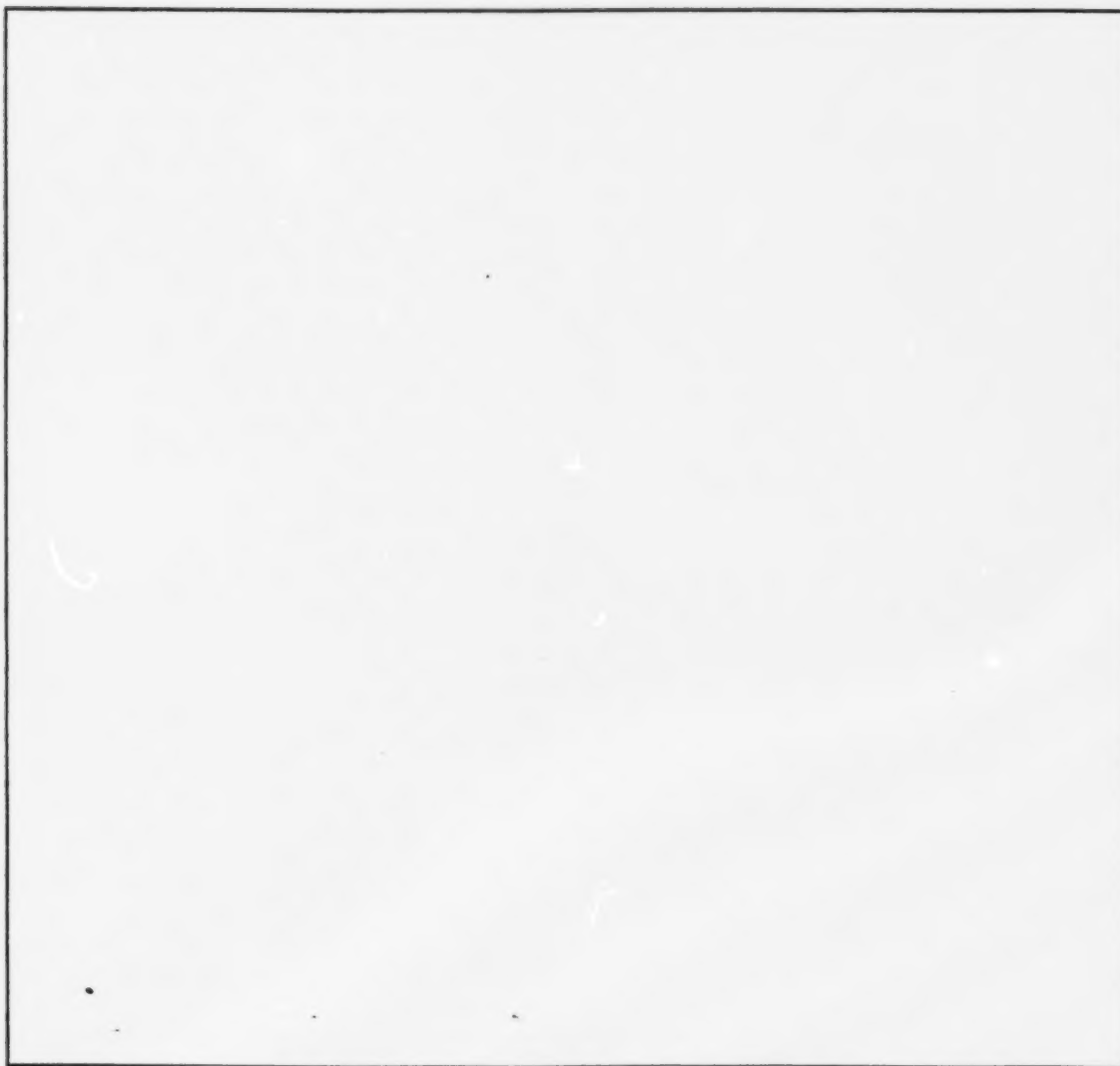
ITEM 3. IN THE SPACE BELOW, MAKE A DRAWING OF YOU AND YOUR FRIENDS PLAYING
IN A PLAYGROUND. MAKE THE BEST DRAWING YOU CAN.
USE A #2 PENCIL AND ALLOW YOURSELF NO MORE THAN 15 MINUTES.



C D A T.

CLARK'S DRAWING ABILITIES TEST

ITEM 4. IN THE SPACE BELOW, MAKE A FANTASY DRAWING FROM YOUR IMAGINATION.
BE AS CREATIVE AS YOU WANT. MAKE THE DRAWING AS INTERESTING AS YOU CAN.
USE A #2 PENCIL AND ALLOW YOURSELF NO MORE THAN 15 MINUTES



What Do We Know About Artistically Talented Students and Their Teachers?

GILBERT CLARK AND ENID ZIMMERMAN

Authors names are listed alphabetically, each contributed equally to this article.

Abstract

This paper contextualises and summarises five research projects concerned with the education of artistically talented students in the United States. It reports on over ten years of research and describes the hypotheses, methods and findings of studies linked by their concern for the special needs of the artistically able. Finally, the paper points towards the next stages of the research.

Introduction

For more than a decade, we co-directed the Indiana University Summer Arts Institute, a summer residential programme on the campus of Indiana University (IU) for sixty to seventy-five artistically talented students, ages eleven to sixteen years. These students were identified, by their local schools, as gifted/talented in the visual arts. During the ten years of the Institute, we attracted students from a number of states, in the United States, and several other countries. Students from Indiana who attended the Institute came from largely small, rural communities and often were the 'art star' in each of their local schools. This mix of rural Indiana students with students from other states and countries created a dynamic environment that was reflected in day-to-day operations of the Institute.

Students at the Institute attended three, two-hour classes every day, six days a week, as well as organised afternoon and evening activities that were arts-related. Most summers, there were nine separate class options from which students could choose to attend three. They selected their classes from options of figure drawing, drawing and painting, printmaking,

computer graphics, photography, visual narrative drawing, sculpture, and ceramics.

Faculty at the IU Summer Arts Institute were selected from members of the Fine Arts Department in the Indiana University College of Fine Arts. Before teaching at the Institute, these faculty members attended an all-day workshop that we co-ordinated and taught about teaching artistically talented students. In addition, we helped them plan units of instruction appropriate to the age levels and abilities of students in their classes at the Institute.

Numbers of art teachers from throughout Indiana, who taught art at elementary or secondary levels, also attended two methods classes that we offered in late afternoons while the Institute students were engaged in recreational activities. These teachers could, in two summers, complete four classes toward a special gifted and talented credential endorsement with a focus on educating students in the arts. In one of their field experiences, they observed an art class taught at the Institute, and, in some cases, assisted the faculty member who was teaching.

In this paper, we will be describing five major

research projects conducted in conjunction with the IU Summer Arts Institute, its students and faculty, and art teachers who attended endorsement classes. These five studies were published in journals in the United States, including *Studies in Art Education*, *Roeper Review*, and *Gifted Child Quarterly*. Two of these studies, 'Screening and Identifying Students Talented in the Visual Arts: Views of Self, Family Background and School: Interviews with Artistically Talented Students' (1988) and 'Screening and Identifying Students Talented in the Visual Arts: Clark's Drawing Abilities Test' (1989), received Paper of the Year awards from the National Association of Gifted Children for the best research paper published in the *Gifted Child Quarterly* during 1988 and 1989.

Being labelled gifted and talented

Some writers have speculated that the label gifted may affect academically gifted students negatively (Mead, 1954; Fox, 1976; Sanborn, 1979; Zuffrann, 1978). Research about labelling those who are talented in the arts appears to be absent from literature about gifted and talented students. When applied to gifted and talented students, labelling theory (that has evolved in the area of the social psychology of handicapped persons) may have great relevance for educating artistically talented students (Zimmerman, 1985).

In 1986, Zimmerman co-authored a paper, 'Being Labelled Gifted or Talented: Meanings and Effects Perceived By Students in Special Programmes', with Guskin, Okola, and Peng. The purpose of their study was to study conceptions of giftedness and talent and perceptions of causes and consequences of being so identified. The participants in this study were forty-seven students attending the IU Summer Arts Institute and two hundred and forty-eight students attending the IU College for Gifted and Talented Youth, another residential summer programme for academically gifted and talented students on the IU campus.

The participants responded to twenty open-ended questions related to their opinions about giftedness and talent in general and their per-

sonal experiences with labelling and special educational programmes. Then, they filled out a check list of self-descriptive labels consisting of adjectives, such as brilliant, talented, gifted, average, smart, and successful. Their final task was to complete three 35 item rating scales (in categories of the 'typically academically gifted teenager', the 'typically artistically talented teenager', and 'you') that consisted of adjectives, such as attractive, shy, quiet, different, emotional, and studious. Responses to the twenty open-ended questions were categorised using content analysis procedures (Holsti, 1969). Frequency distributions of responses to the checklist of self-descriptions and the three rating scales were derived for the academically gifted and artistically talented groups. Chi square tests were used to ascertain the significance of group differences.

Following are some sample student responses to the twenty open-ended questions task in which participants were asked questions about determinants of giftedness and talent. When asked, 'Can anybody have special abilities and talent?', 65 per cent answered yes. One third of these responded that everyone has special abilities or skills; one half stated that anyone could be especially able or skilled if they were motivated, worked hard, and practised their skills, and 23 per cent referred to some aspect of innate capacity in their responses.

In general, these students did not view gifted and talented people as different from others, except in their efforts to initiate their own gifts and talents. When asked, 'Do other people such as friendly teachers and parents treat you differently because of your special abilities?', over one third indicated they were not treated differently; negative reactions to this question were reported only 14 per cent of the time. These responses about little negative reaction from others to students labelled gifted and talented conflicted with speculations in the literature that gifted and talented students often are rejected by others (e.g., Ford, 1978; Lutz & Lutz, 1980).

Results of this study indicated that these students (a) did not view gifted and talented persons as very different from others, (b) believed giftedness can be attained by hard work, (c)

experienced little negative reaction from others to being labelled gifted and talented. (d) had highly favourable views of themselves and of academically and artistically gifted and talented students in general, and (e) did not want to be perceived as outstanding or too different from others. In general, it was concluded that being labelled as gifted and talented in arts or academic areas did not have negative consequences for these students.

Views of self, family background, and school

One benefit of having the IU Summer Arts Institute on the IU campuses was bringing together a large number of artistically talented students as subjects for research. During several summers, we interviewed all of the students attending the Institute and, in doing so, began to draw images of students with high abilities in the visual arts. In 1988, we used part of this data to write, 'Views of Self, Family Backgrounds, and School: Interviews with Artistically Talented Students' (Clark & Zimmerman, 1988).

Our purposes in conducting these interviews was to gain greater understanding about a number of factors that were not well explained in gifted education literature. We hoped to confirm and/or challenge a number of assertions and assumptions reported in some gifted and talented education literature. Some of these factors were the students own perceptions of (a) their early talent development, (b) the roles of adult and peer encouragement in their development, (c) their position in their families, (d) the history of their interest in drawing, (e) their home life and home environments, (f) the extent of their familiarity with famous artists and art history, (g) their reactions to their art teachers and other aspects of their schooling, and (h) their own assessment of their art abilities.

Interviews for this study were based on conversations with twenty IU Summer Arts Institute participants. Of these, eight who were born or lived outside the United States were chosen to be interviewed because of their international backgrounds: the twelve participants from the

US were selected randomly. Each participant was interviewed for approximately ninety to one hundred and twenty minutes. We used an interview protocol to assure coverage of specific questions but the protocol was used informally and each conversation took its own turns and directions. Analysis and generation of resulting data was conducted through content and comparative analyses in which we listened and read collected data critically, tried to discover meaning in the data, looked for significant relationships, synthesised, and arrived at conclusions based on the data (Holsti, 1969; Gordon, 1978; Mostyn, 1985). Conceptual categories resulted from analysis of the interview data; these categories, with sub-categories and representative examples of direct quotations from students, are described as follows.

In respect to their views of themselves, a majority of students experienced good feelings about themselves and their abilities, were able to accept criticism, and were anxious to improve their artwork.

I don't mind being criticised. It's like you've got to accept it, you can't go through life thinking that you're doing everything right. I'm sure everybody has a lot of mistakes. I'm thirteen years old, and I've still got a lot to learn.

Half the students expressed an interest in having a career in the arts.

Ever since I was small I always knew what I was going to be, always an artist. . . You know when other kids say I want to be an astronaut, well I always wanted to be an artist, and the parents would look at me like you know this kid's been watching too many movies.

When asked about their views of school and studying art, three images of regular art teachers emerged. One was of teachers who were supportive, but did not challenge students to higher levels of achievement. Another was of teachers who were challenging, but who failed to reinforce or support accomplishments. The third image was of teachers who were challenging, but who failed to offer instruction about how to succeed.

I get sick of being told everything I do is good. . . I know it's not perfect but she's like 'it's great!'

I'm going 'do you really?' ... But like 'it's great, don't do anything more', and I never get satisfied with my work.

Students' views of teachers, students, curricula, and settings at the Institute were quite positive. Most students found that teachers at the Institute (a) challenged them more than those in their regular schools, (b) taught them to use new media, (c) made them think about what they were doing, (d) made them look more carefully, and (e) taught them how to express themselves through use of techniques.

I couldn't draw - the second [the teacher] explained it to me, I knew what I had been doing wrong. He said I was looking at it as what it is and my brain was drawing what it knows it looks like. Once I learned that, I started looking at it as a shape and then my drawing got one hundred percent better. No comparison.

Many students expressed pleasure at the openness of conversations among Institute students in which they shared ideas and critiqued each others' artworks.

One thing, in class we enjoy ourselves so much we want to work. ... we enjoy, we talk, we joke. I feel if I enjoy myself I can do more work and my work will come out better and better.

Our interviews yielded many impressive results as they applied to views of self, family backgrounds, and schooling. Conclusions based on these interviews reinforced some previously reported findings, but also challenged others (Getzels & Csikszentmihalyi, 1976; Chetelat, 1982; Bloom, 1985). The students we interviewed were very much aware of their talents and realised that they possessed unusual abilities. They were favourable toward gifted and talented students in general and very supportive of students with high abilities in the visual arts.

Contrary to some previous reports, these students devoted a great deal of their time and energies to drawing and reported that creating art was stimulating and pleasurable. They also revealed early evidence of superior drawing abilities at very early ages, often before entering school. Their talents were reinforced by family members who encouraged their art making and

art interests, although few of the students could recall any family member who was involved with the arts and few of them had access to books about art in their homes. Most of the students we interviewed, who were from the US, described their regular schools as important because these schools provided a social community. Many of the students we interviewed were from rural communities and they did not have friends who were talented in the arts. Almost all of the students were good students, often selected to participate in gifted and talented programmes in their local schools. Despite this, many voiced their frustrations and awareness that they needed more rigorous and more advanced instruction in the visual arts than they received in school. They were, obviously, very conscious of, and critical of, their own abilities. Analysis of the findings of this study verified or called into question results of previous research about artistically talented students. Further research needs to be conducted with more subjects in diverse settings to further elucidate understandings of perceptions and life situations of artistically talented students.

A case study of a painting teacher

There have been a number of ethnographic studies, using a case study approach, about art teaching at junior high and senior high schools in the United States (e.g., Alexander, 1980, 1983; Degge, 1976; Johnson, 1985; Stokrocki, 1986, 1987, 1988, 1990). Traits for successful teaching of academically gifted and talented students, such as flexibility, creativity, developed self-concept, depth and breadth of knowledge, sense of humour, and teaching experience, can be found in results of a number of case studies (e.g., Story, 1985; Lundsteen, 1987); yet, no case studies were identified, through a literature review, about teachers of artistically gifted and talented students.

The purpose of Zimmerman's research, 'Rembrandt to Rembrandt: A Case Study of a Memorable Painting Teacher for Artistically Talented 13 to 16 Year Old Students' (1988), was to describe and analyse characteristics of a memorable teacher of artistically talented students at

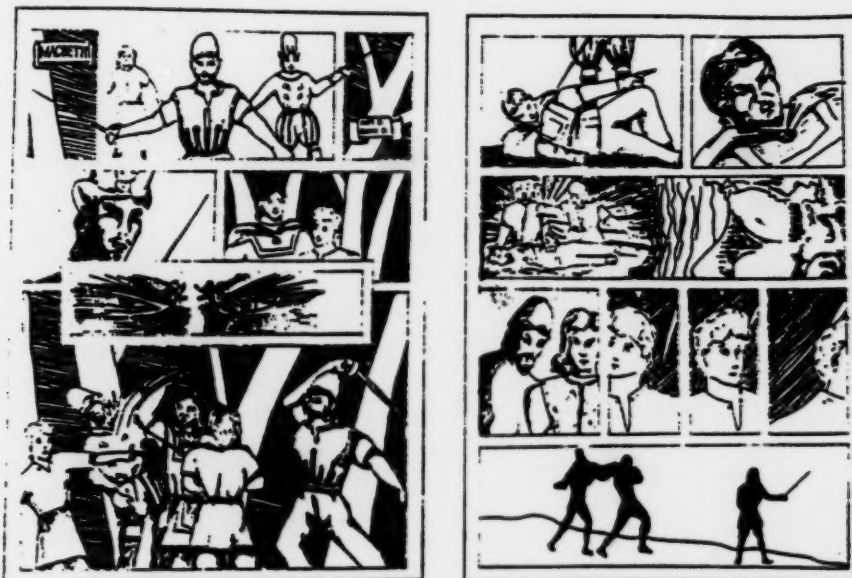


FIGURE 1
Visual narrative drawing of a scene from Macbeth by an IU Summer Arts Institute Student.

the IU Summer Arts Institute. This research then could be compared with similar case studies to create generalisations about successful teaching of students with high abilities in the visual arts. Subjects were twenty students in an advanced painting class at the Institute and a painting teacher at the Institute who will be referred to as Mark. Data was collected in a variety of ways. Zimmerman took notes of all ten, two hour class sessions, audio taped five class sessions and two interviews with Mark, and took slides of classroom activities. Data from student registration forms, two journals of teachers in an endorsement class who were observers, and informal interviews conducted by two IU art education doctoral students also were used as data for this research. In addition, Stokrocki's (1986, 1987, 1988) time sampling method, in which counting and categorising behaviour to describe type and frequency of occurrence of different aspects of a teacher's instruction, was used to collect and analyse data. Content and comparative analyses were used to generate

conceptual categories that were interrelated to form generalisations that guided understanding of the teacher's instruction and the context in which it took place (Glaser & Strauss, 1967; Gordon, 1978; Holsti, 1969; Mostyn, 1985).

Following are some categories that emerged from the data and representative quotations from Mark and the students he taught at the Institute. Mark put considerable time and energy into his teaching; to capture his students' attention he observed, 'a teacher needs to be dynamic to keep them interested and challenged.' He mentioned two important things he wanted his students to take away from his class. One was to help them understand what it is like to be an artist, and the other was to paint an adequate self portrait. On one occasion he said to the students, 'your pictures feel very personal like particular worlds... and your creativity will not come out automatically, don't worry about it.' To help students comprehend issues of self-expression and interpretation, he compared a reproduction of an early Rembrandt self-portrait



FIGURE 2
Painting by an eighth grade IU Summer Arts Institute Student.

with one he created in old age. In the latter, Mark explained, 'he was actually living a life instead of a role and living a mask.' Humour permeated Mark's classes. He often compared portraits painted by well-known artists in the past to contemporary stereotypes such as yuppies, punks, and 'guidance counsellors who talk to you when you go astray'. Mark constantly reassured his students telling them he knew they might experience 'boredom, frustration, and rage. Paint anyhow, in five minutes it will go away and you will feel the opposite.' An excerpt from a conversation between Mark and a student, who had trouble getting started on her project, was typical of his approach:

Get yourself together. You have a strong will; you are indulging yourself by thinking you can't do things. . . you have a lot of strength. You will be great someday.

Results of this study included a number of observations about Mark's teaching strategies: (a) his students meet his goals which were to



FIGURE 3
'Mark' instructing a student at the IU.

learn about themselves and their artwork, (b) his emphasis was on developing students' cognitive and affective skills and this was evident in all phases of his instruction, (c) he stressed understanding of what it is like to be an artist, (d) a pervasive factor was his belief that being able to paint involves a group of skills that can be taught, (e) he challenged students and helped them reach their potential, (f) he served as a powerful model of an artist who shared his technical 'secrets' with his students, (g) he was knowledgeable about art and communicated effectively with his students, (h) he was deeply involved with teaching, (i) his sense of humour and storytelling abilities made class interesting, (j) he showed individual attention to all his students and asked them high level questions, and (k) he evidenced a wide range of knowledge on many topics and was creative in developing curricula ideas and activities. It was concluded that generalisations from this case study could be used to provide a model of successful teaching of artistically gifted and talented students that could be compared with other case studies to create a foundation for future research and practice.

A comparative study of painting teachers

After completing the 1991 case study of Mark, Zimmerman decided to compare a case study of another teacher, who taught an advanced painting class at the Institute the next summer, with Mark's, in order to determine similarities and differences between successful classroom practices of two art teachers of talented young adolescents. Therefore, in 'A Comparative Study of Two Painting Teachers of Talented Adolescents' (Zimmerman, 1992), instructional strategies of the two teachers, referred to here as Mark and Laura, were compared. Conditions during both summers were very similar and the number of students and their abilities were comparable.

Data were collected through field notes, audio-tapes of class sessions and interviews with students and teachers, students' registration forms, five teacher-observers' journals, slides of



FIGURE 4
Student painting at the IU Summer Arts Institute

classroom activities and student artwork, and Stokrocki's systematic time sampling methods. These data were analysed through content, comparative, and time-sampling analyses and were concurrently verified by journals kept by classroom observers and conversations with teachers and observers. Content analyses of notes, tapes, interviews, and slides were conducted to generate conceptual themes such as developing students' art making skills, knowledge of the art world, personal expression, and the teachers' proactive and reflective approaches to teaching. These were interrelated to form generalisations that illuminated and clarified the two teachers' instructional methods.

For Mark, teaching was about 'relating to people' and what students actually created was secondary. He believed the teacher's role was

very important and that teachers were responsible for helping students learn both about themselves and their artwork. Laura's overall emphasis was on having students make still life paintings that would be as realistic as possible.

Laura's directions to students always involved discussions about how to do a specific painting exercise. For example, in reference to painting a still life, she said to the students, 'You have to do a back, white, and grey painting. Decide on your composition. Sketch it quickly. You can paint over the lines later'. Realism always was the yard stick by which all work was evaluated. As was described previously, Mark adopted roles of artist-teacher and storyteller. His sense of humour and ability to have empathy with his students were salient characteristics of his teaching style. He told one discouraged student, 'Your sense of panic won't go away unless you do things. It's not serious. . . you are tired but you can do it.'

Both Laura's and Mark's approaches to each student were positive. Praise statements usually preceded corrections and suggestions for improvement. Students were unanimous in their approval of both Mark and Laura as teachers. Compared to their regular art classes, these students felt that they learned much more about art at the Institute. Acquisition of painting skills and techniques was viewed as the most important aspect of Laura's painting class. Laura's conversations with individual students pertained only to technical properties related to their art making, such as, 'if you don't like the way you painted it, do it again', 'squint more to see the darkest places', or 'a bit too reddish'. Half her students cited acquiring skills such as learning about colour, light and shade, and underpainting. 'I've never done these things before', a student said, 'and I never realised it would help so much'.

Mark believed technical skills of painting could be taught and he wanted all his students to paint adequate self portraits. He noted:

That is extremely difficult to do. Kids want control in their own lives, and they want to learn to control what they are doing. . . they want to paint like Rembrandt, not Pollock.

As an artist who taught, Mark can be compared to a magician who shared secrets. He said he shared 'secrets of shading, secrets of doing self-portraits,' and the 'mystery of learning to draw realistically'. For Mark, 'anyone can learn to paint: it's like brushing your teeth'. Sixty-five percent of Mark's students mentioned his teaching methods as helping them to learn to paint, look at things differently, and understand basic structures. His stories were mentioned as reducing tension, promoting alertness, and being informative by ninety percent of his students. One student noted, 'When you are down and out and you really feel bored, he pushes you through'.

Comparison of these two case studies revealed the following results: (a) if only art products and student interviews were considered, both teachers would be viewed as successful in creating a context for teaching talented adolescents, (b) both teachers stressed acquiring skills and techniques through a teaching system, (c) Laura provided opportunities for skill development, and (d) Mark provided opportunities for skill development and also encouraged students to think reflectively about the contexts in which they created art, become engaged with art issues, and examine their reasons for creating art.

It was concluded, as a result of this research, that successful teachers of artistically talented students should understand each student's sensibilities, teach proactively, present mediated learning experiences in which students can be engaged in the world or art, reflect critically about their teaching, and have preparatory experiences in learning how to organise classes and teach highly able adolescent art students. Other case studies of teachers of artistically talented students should be undertaken at other sites with different populations and teachers so that generalisations from these two case studies may be accepted or refuted.

Clark's Drawing Abilities Test

Development of a new test to measure children's drawing abilities was motivated by previous inquiry and speculation about the abilities

and development of artistically gifted and talented students (Clark, 1982). Clark worked with some graduate students during early development of test items and test configurations. From 1980 to 1990, field testing was conducted and the history of assessing children's art abilities was investigated (Clark, 1991). The purposes of the new instrument development were to (a) create an easy to use test that could be used to categorise student artwork into differential ability groupings (as is done frequently in several other school subjects), and (b) to develop an instrument that could be used to test the assumption that art talent is a normally distributed human characteristic. The first purpose was practical and related to art instruction in schools. The second purpose was more theoretical and related to speculations Clark (1982) and Clark and Zimmerman (1984, 1987) had made previously.

After the current version of Clark's Drawing Abilities Test was developed and field tested extensively, research about the effectiveness of the test was published by Clark in 1992 as, 'Screening and Identifying Students Talented in the Visual Arts: Clark's Drawing Abilities Test'. The test, considered reliable and valid, was based upon previous research and analyses and, for a number of years, was administered to all of the students who applied to the IU Summer Arts Institute. Early testing was conducted from 1984 to 1988, and in addition to being used at the Institute, simultaneous use of the drawing test was being conducted in various public schools in the US and in several other countries.

Clark's Drawing Abilities Test consists of four items in which subjects are asked to complete four drawing tasks. All of these tasks have considerable historical precedents and have been used in one form or another for over a number of decades. Many of these precedents have been described and reported previously (Clark, Zimmerman, & Zumuehlen, 1987; Clark, 1991, 1992; Clark & Wilson, 1991).

Subjects administered Clark's Drawing Abilities Test are asked to:

- 1 Draw an interesting house as if you were looking at it from across the street.
- 2 Draw a person who is running very fast.
- 3 Make a drawing of you and some of your friends playing in a school yard, and
- 4 Make a fantasy drawing; be as creative as you wish and draw whatever you like.

Reasons these items were chosen, beyond their use by many previous researchers, was that they revealed evidence of differential types of abilities. Item one offers evidence related to abilities to draw with perspective, represent a three-dimensional object, show relationship of parts to a whole, use proportions, use elaboration, and demonstrate other skills related to the subject's developmental stage. Item two offers evidence of differential abilities to represent proportions, depict a figure in motion either realistically or symbolically, use elaboration, create a meaningful setting, and demonstrate other skills related to the subject's developmental stage. Item three requires depiction of spatial relationships, receding space, overlapping or differential size relationships, figures in action, creation of a meaningful setting, and other skills representative of the subjects developmental stage. Items one, two, and three specify the subjects to be drawn. Item four is open-ended and self-generated. An important factor in analysis of Item four drawings is its relationship to the previous three items, in regard to evidence of knowledge, skill, and understanding. The subject matter chosen and delineation of that subject are analysed closely. The use of space and composition are important, as they are in analysis of the previous three items. Item four requires subjects to write a title and these are analysed for their depiction of meanings, uses of humour or irony, and possible word-play.

Test results are scored in two ways. For simple identification of differential ability groups, teachers are advised to sort the test booklets into three groups: an 'indifferent' or weak group, an 'average' group, and a 'remarkable' or strong group. Some teachers also re-sort the 'average' group into a 'below-average', 'average', and 'above average' groups. This type of

sorting yields groups of students who demonstrate differential needs for instruction. For purposes of identifying students for recommendation to a gifted and talented programme, an elaborated scoring scale is available. This scale is based upon use of sensory properties, formal properties, expressive properties, and technical properties, as described by Broudy (1972) and Holden (1975), and of general delineation skills, interpretations of directions, and use of language and imagination in the title for item four. Each of the scoring items is rated on a 1-5 scale.

Test results have been analysed and reported based upon test scores, demographic data about subjects (such as age, grade, and SES categories), and achievement test scores. Early testing of the items also was compared to scores on the Children's Embedded Figures Test (Karp & Konstadt, 1963). Results of the 1984 and subsequent testing demonstrated that Clark's Drawing Abilities Test scores consistently correlated with teachers' ratings of student success in various arts classes at the IU Summer Arts Institute at a greater than .01 significance level (Clark, 1991). From 1985 to 1990, the test was used effectively to predict student performance in various art classes at the Institute. Test-retest and split-half item comparisons were used to assess the effectiveness and reliability of the test and these also yielded greater than .01 significance levels. As more and more subjects were tested, age, gender, and SES correlations with CDAT scores were obvious. Clark's Drawing Abilities Test has been used effectively to categorise differential ability groups of students and is being used currently to test the assumption of art talent as normally distributed.

Future directions

In reviewing literature about artistically gifted and talented students, we found little infor-

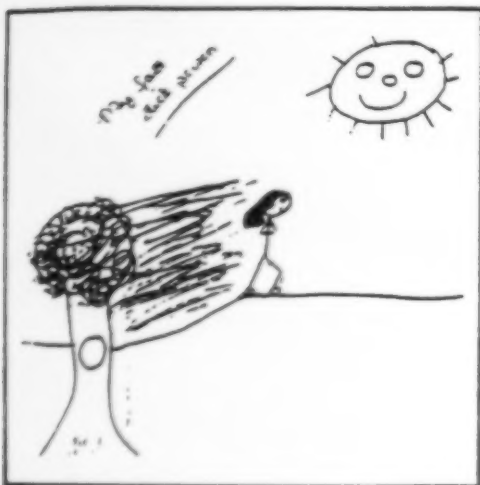
mation or research in this area, although we knew a need to study this group of students existed. As a result of our literature review and our own research at the IU Summer Arts Institute that focused on rural, artistically talented students and their teachers, we decided to apply for, and in 1993 received, a three-year Jacob Javits Gifted and Talented Students Education Programme Grant for Project ARTS (Arts for Rural Teachers and Students). This project is a three state consortium with administrative responsibilities at Indiana University and satellite sites at Converse College, South Carolina and New Mexico State University. Public schools serving rural, underserved, ethnically diverse, visual and performing arts, gifted and talented students will be co-operating partners. This consortium will develop, modify, demonstrate, and implement methods, curriculum modifications, and evaluation procedures building on local arts resources and cultural traditions appropriate to the needs of rural gifted and talented arts students from Gullah-African American, American Indian, Hispanic American, Appalachian, and European American backgrounds. Local community members and parents will take active roles in Project ARTS programme development, implementation, and evaluation. In-service training materials will be created to help teachers and administrators, as well as parents, identify, educate, and evaluate students from the targeted populations and be better informed about serving their educational needs. In the future, Project ARTS will provide model programmes and resources for other communities with similar populations of rural students with high interests and abilities in the visual and performing arts.

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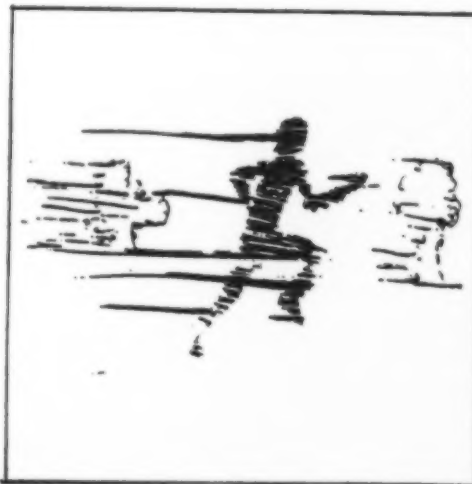
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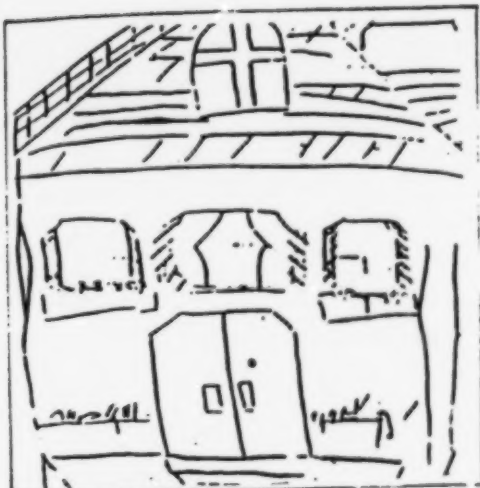
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A Sample Set is available that includes a copy of the test booklet, the scoring key, illustrations of sample item responses, and article reprints explaining background and use of Clark's Drawing Abilities Test.

Multiple copies of Clark's Drawing Abilities Test are available for use with school-age subjects. Because the test is considered experimental at this time (pending data collection from a much larger sample), research is still being conducted about children's drawing development, and because past users have raised questions about the scoring method and procedures, multiple copies are being sold subject to users agreement to return test booklets to ARTS Publishing Co.Inc.to be scored.

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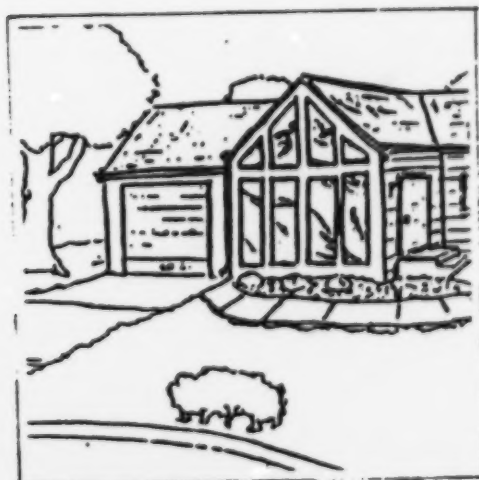
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